

Appendix I

HYDROGEOLOGIC DATA SUMMARY OF

THE FLORIDAN AQUIFER SYSTEM,

LOWER WEST COAST PLANNING AREA

The Lower West Coast (LWC) Planning Area includes Collier and Lee counties and portions of Hendry, Charlotte, and Glades counties. A combination of natural drainage basins and political boundaries define the extent of the LWC Planning Area. Water supply plans developed for the LWC Planning Area have identified the Floridan Aquifer System (FAS) as a possible water supply alternative. Based on these plans, the South Florida Water Management District (SFWMD) initiated a program of well construction, aquifer testing, and long-term monitoring to provide data needed to assess the FAS underlying this area. Between 1994 and the present, ten multizone wells were drilled into the FAS at five locations (**Figure I-1**). Five of these wells were used in aquifer performance tests to define the hydraulic characteristics of various sections of the Floridan, while the remaining five wells were used solely as water level and water quality monitor wells. These wells will supply information needed to characterize the water supply potential of the FAS and to support the development of a ground water flow model, which will be used to support future planning and regulatory decisions.

The FAS wells were drilled, constructed, and tested by drilling firms licensed by the State of Florida. The firms were retained by the District under two separate contracts (C-4172 & C-7663). The total costs for services rendered and material supplied under these two contracts were approximately 3.1 million dollars.

The purpose of this appendix is to document the hydrogeologic field data collected during this well drilling and aquifer testing program. The information includes a summary of the following:

- Well drilling and construction details
- Lithologic and geophysical log data
- Water quality and stable isotope data
- Petrophysical data
- Aquifer performance test data and analyses
- Long-term potentiometric head data

The FAS consists of a series of Tertiary age limestones and dolostones. The system includes permeable sediments of the lower Arcadia Formation, Suwannee Limestone, Ocala Group, Avon Park Formation, and the Oldsmar Formation. The Paleocene age Cedar Keys Formation with evaporitic gypsum and anhydrite forms the lower boundary of the FAS (Miller, 1986).

The FAS consists of thin, discrete, highly permeable, water bearing horizons interspersed within thick, low permeable units. Relatively impermeable high magnesium limestones and dolostones form a middle confining unit that subdivides the aquifer system into an upper and lower aquifer (Miller, 1986). The top of the FAS, as defined by the Southeastern Geological Society AdHoc Committee on Florida Hydrostratigraphic Unit Definition (1986), coincides with the top of the vertically continuous permeable carbonate sequence. The top of the upper FAS is not stratigraphically controlled and may occur within various stratigraphic units ranging from the lower Arcadia Formation to the upper

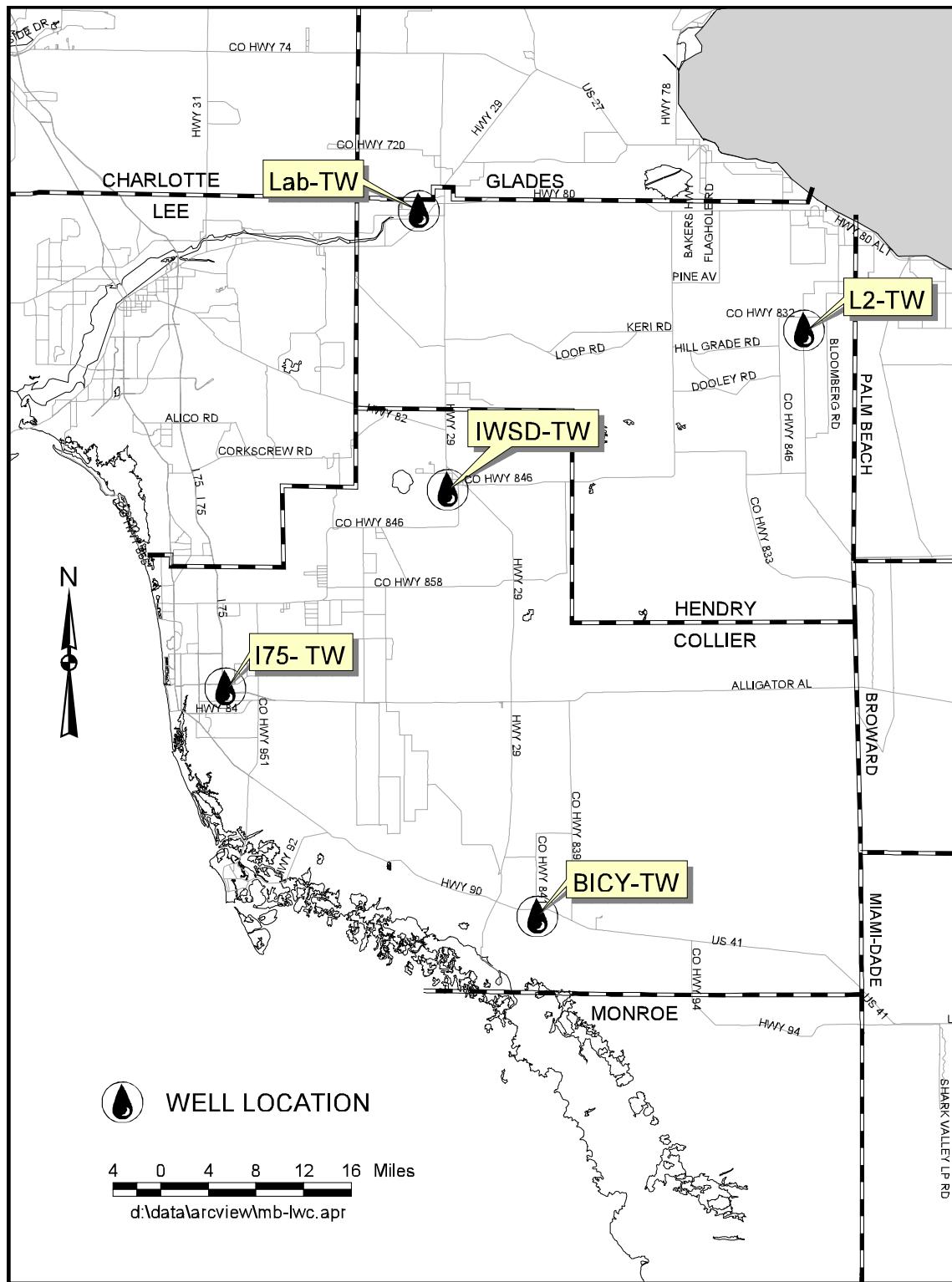


Figure I-1. Location of Floridan Aquifer Test Wells.

portion of the Ocala Group. Based on the above definition, the upper FAS ranges from 670 to 800 feet below land surface at the five locations.

Both mud rotary and reverse-air techniques were employed during drilling operations. Mud rotary drilling was used to advance the bore hole through the unconsolidated to semiconsolidated sediments of the Surficial and Intermediate aquifer systems. Reverse air drilling was used to advance the pilot hole through the FAS. This method provides better lithologic samples, reduces the potential for formation damage by invading drilling fluids, and provides a drilling method that can be continued through potential zones of high permeabilities (e.g., lost circulation). Upon completion of each stage of pilot hole drilling operations, geophysical logs were run in the open hole section of the well bore.

Data from formation samples, packer tests, and geophysical logs were used to select the open hole section for long-term monitoring and further aquifer testing and to determine the actual casing setting depths. The pilot hole was then reamed to specified diameters for the selected casing setting.

Various diameter concentric steel casings ranging in diameter from 4 to 24 inches were used in the construction of both the multihorizon monitor and test production wells. Small diameter fiberglass casing was used in the construction of the lower FAS monitor wells due to the corrosive nature of the formation waters. **Figures I-2** through **I-6** show well construction details of the multihorizon FAS monitor wells.

Geologic formation samples were collected, washed, and described during the drilling of the pilot hole. Formation samples were collected continuously and separated based on their dominant lithologic or textural characteristics and, to a lesser extent, color. Representative formation samples were split into two sets and distributed to the District and the Florida Geological Survey (FGS). Well cuttings were described in detail by the Florida Geological Survey and incorporated into their statewide database. Lithologic columns were constructed using the District's on-site drilling log and lithologic descriptions provided by the FGS. A copy of the FGS's detailed lithologic descriptions for each pilot hole/monitor well (identified by the FGS generated reference number) can be obtained from their Internet web site: www.dep.state.fl.us/geo/data/litholog.htm. **Figures I-7** through **I-11** summarize the lithology, geologic units, and hydrogeologic units identified at each of the five locations.

Geophysical logs were run in the pilot hole after each stage of drilling. These logs were run to provide a continuous record that can be interpreted to provide the physical properties of the subsurface formations and the contained fluids. Logs were also used to assist in the interpretation of lithology, to quantify permeability, porosity, bulk density, and resistivity of the aquifer, and to identify chemical characteristics of the ground water. The extent and degree of confinement of confining intervals can also be discerned from the individual logs. Geophysical logging companies (e.g., Western-Atlas) provided specialty logging services using more technologically advanced bore hole and data processing equipment. All geophysical log data were downloaded directly from the on-site logging processor. The District and local nonspecialty logging firms provided supplemental

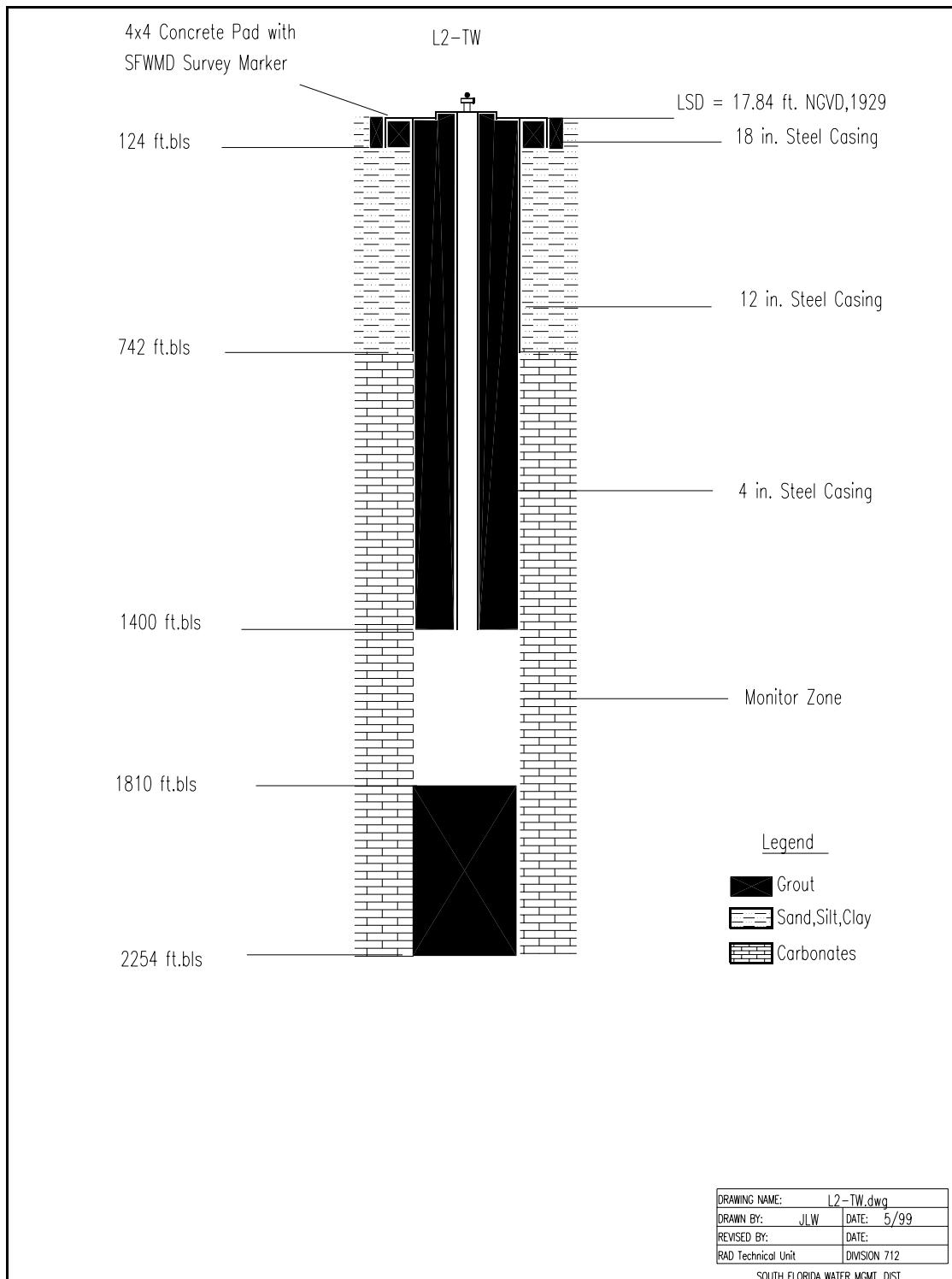
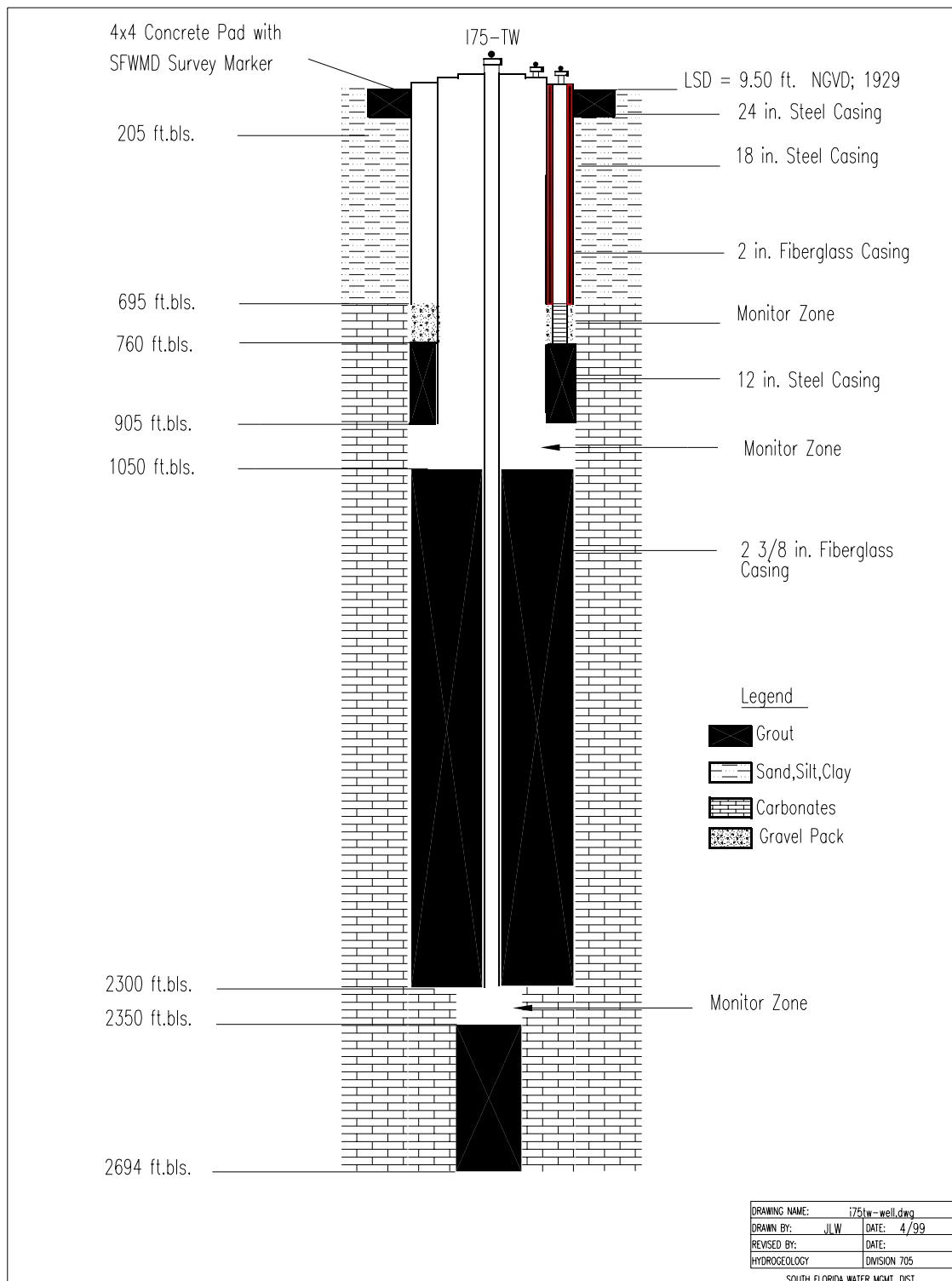
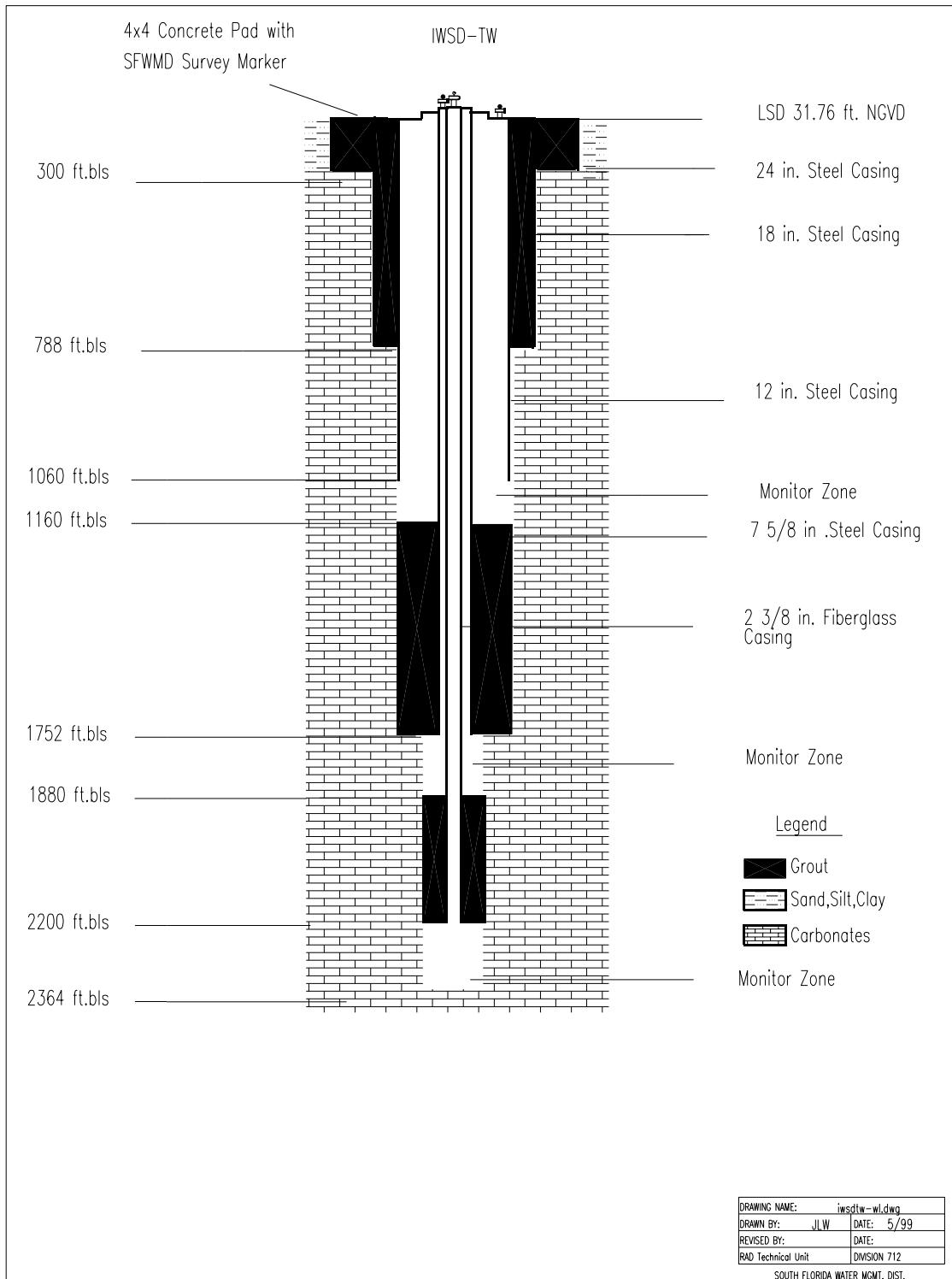
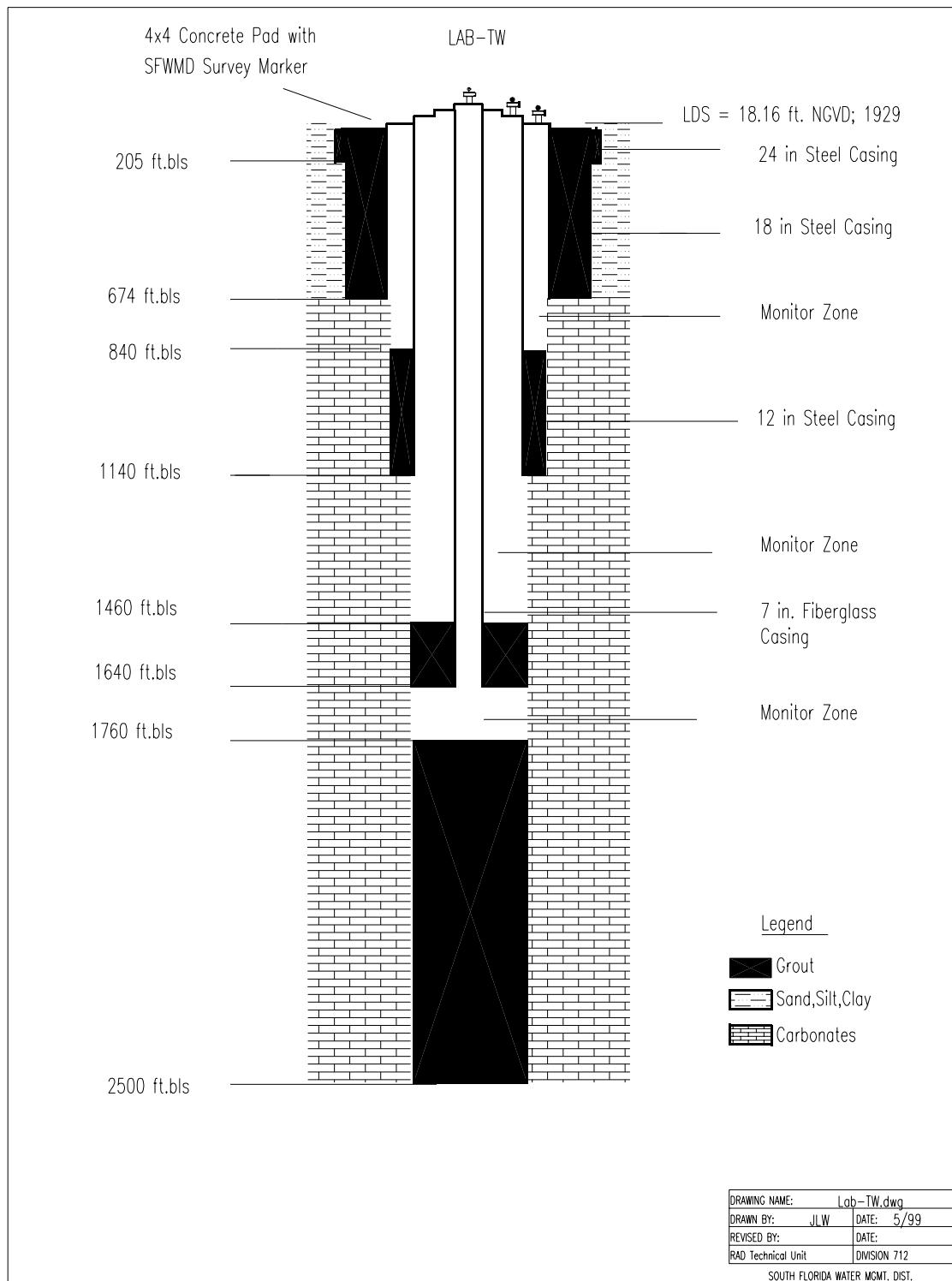


Figure I-2. L-2 Canal Single Zone Monitor Well.

**Figure I-3.** I-75 Canal Tri-Zone Monitor Well.

**Figure I-4.** IWSD Tri-Zone Monitor Well.

**Figure I-5.** LaBelle Tri-Zone Monitor Zone.

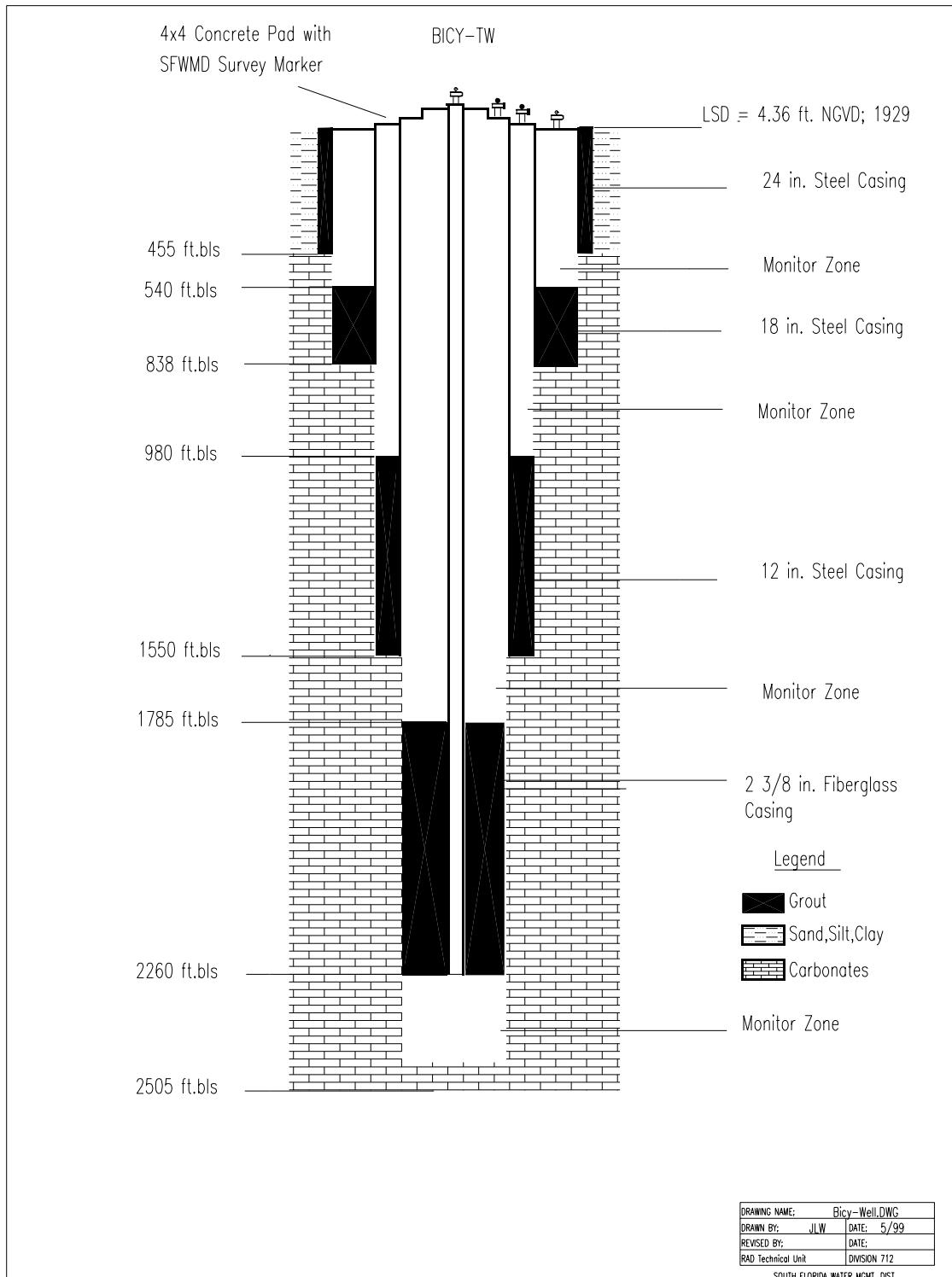
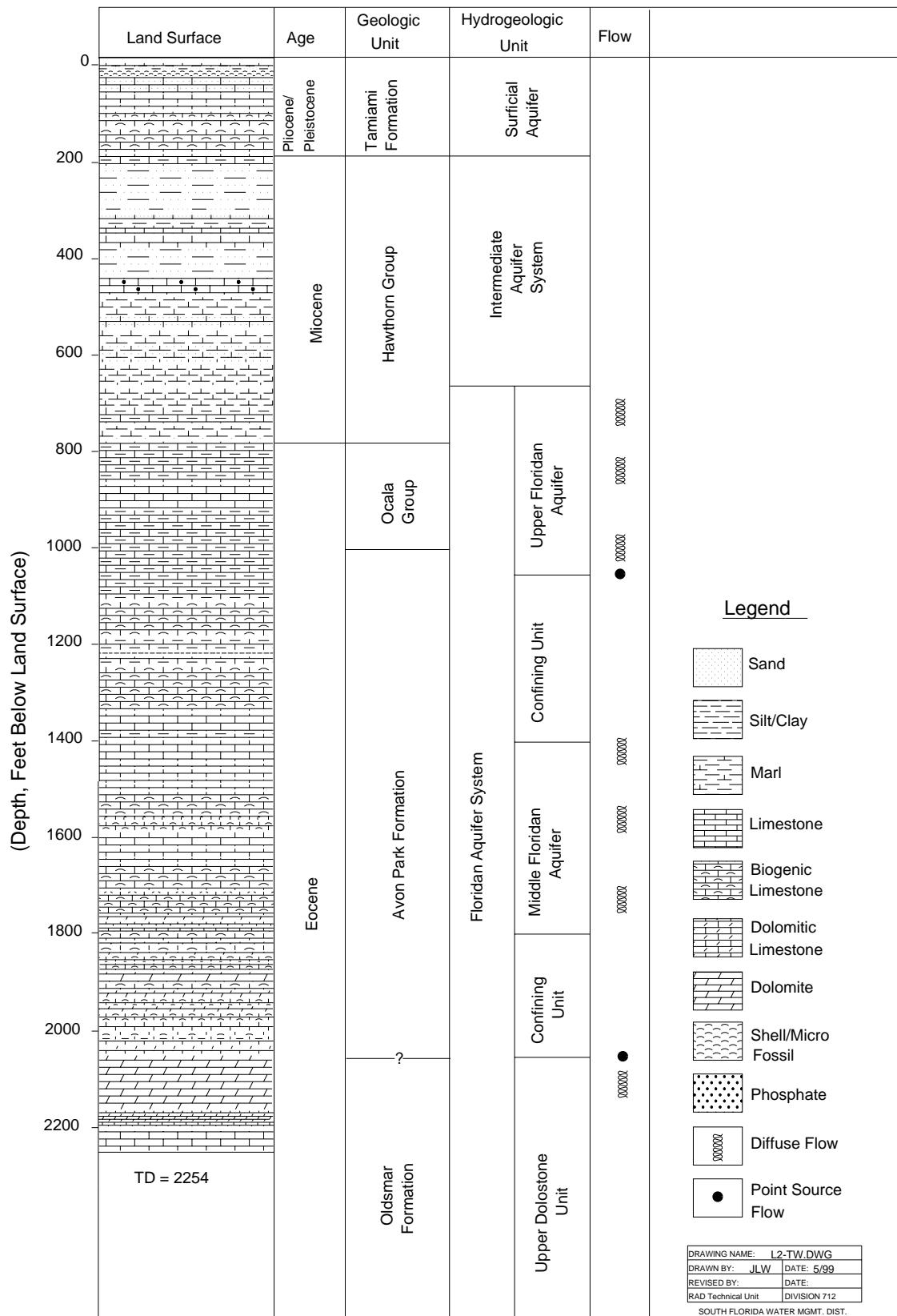
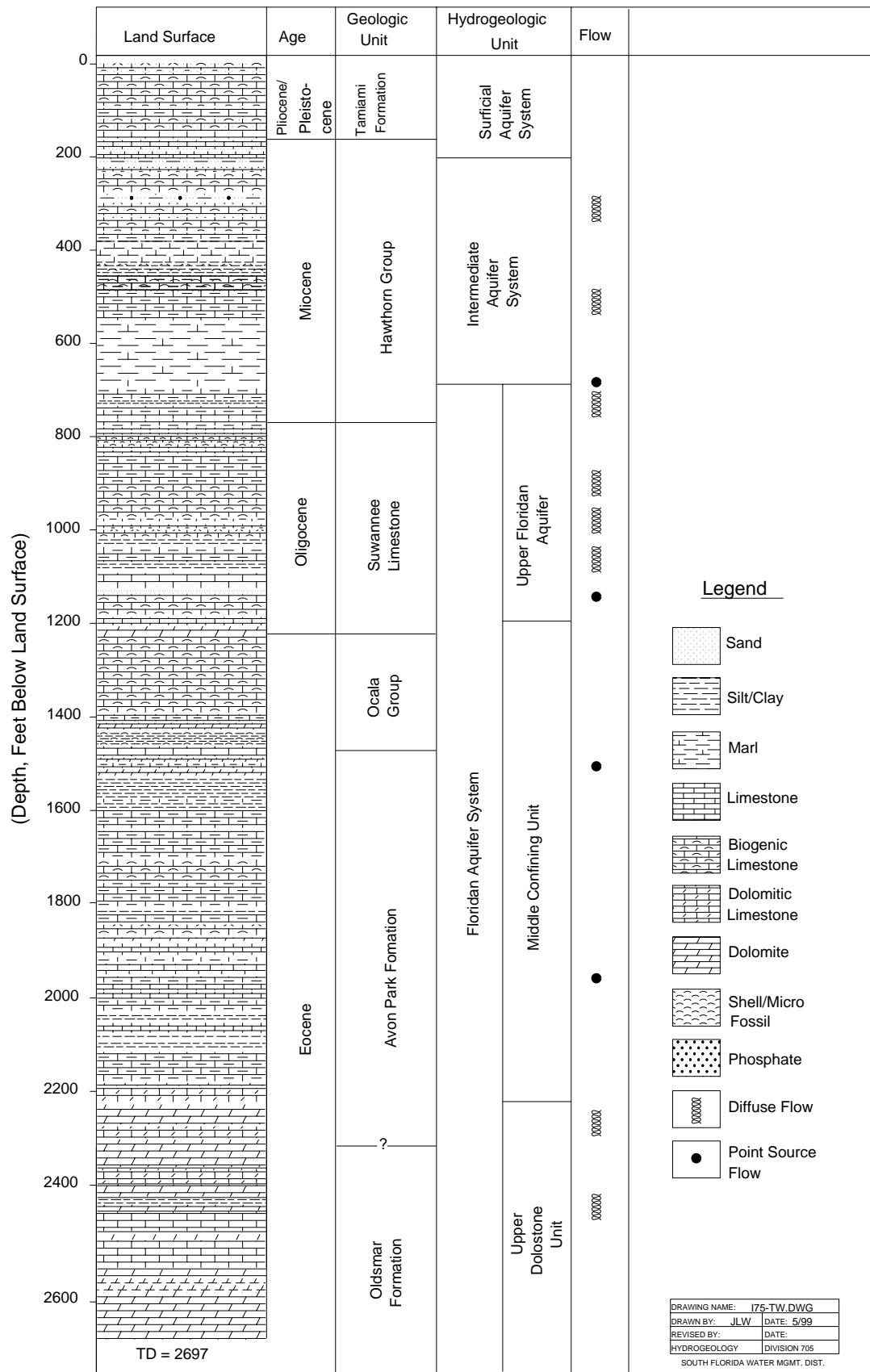
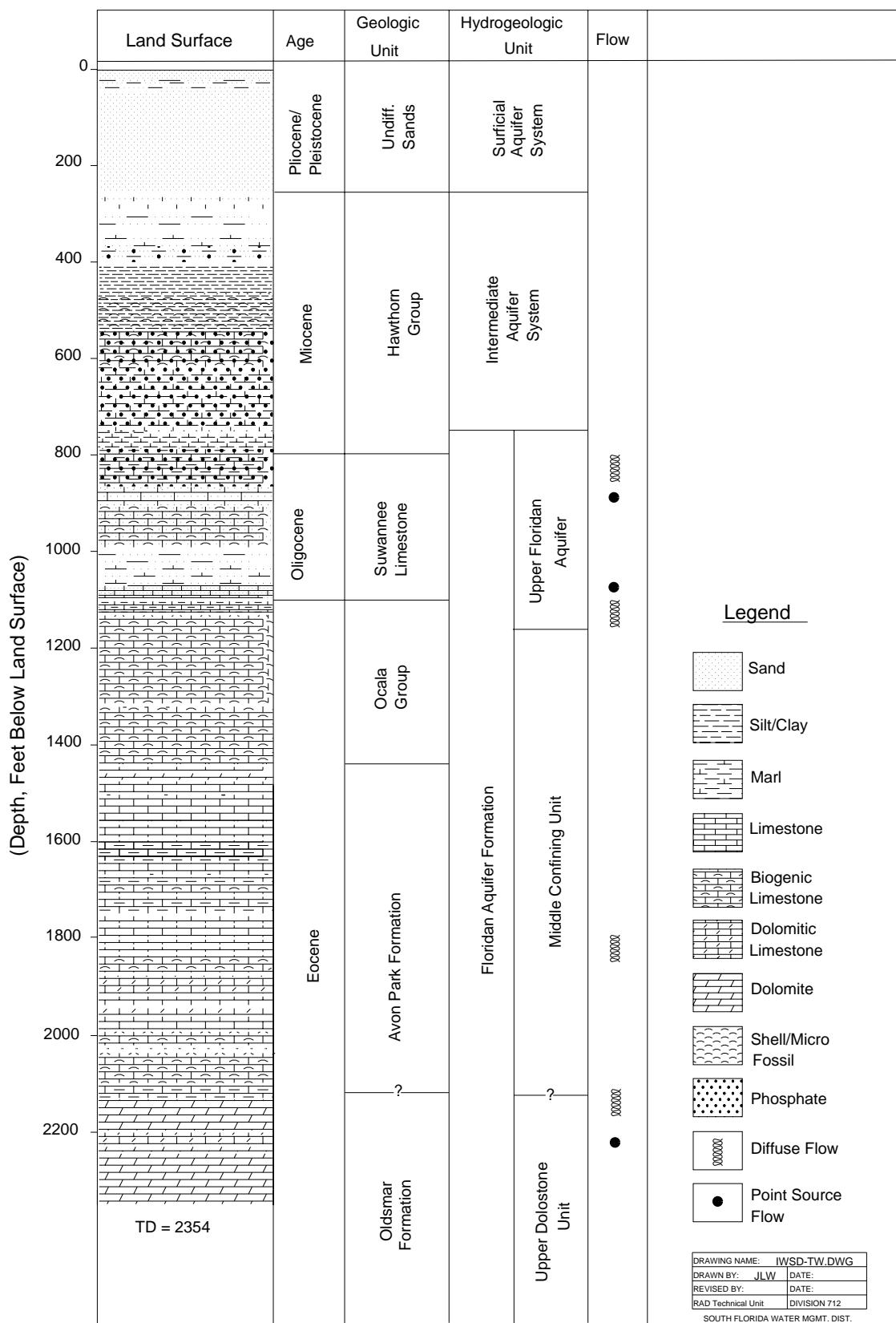
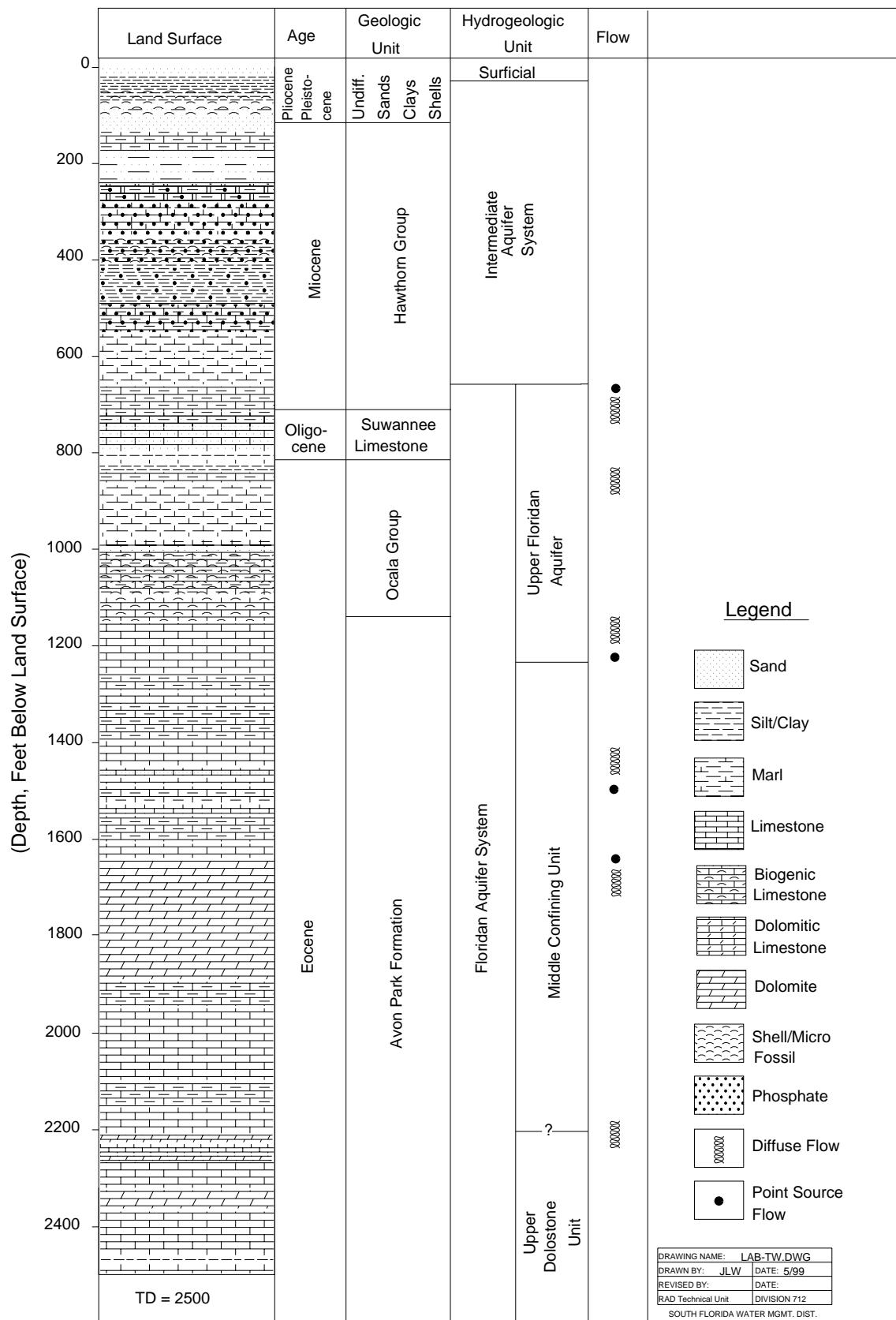


Figure I-6. BICY Preserve Quad-Zone Monitor Well.

**Figure I-7.** Generalized Hydrogeologic Column for L2-TW.

**Figure I-8.** Generalized Hydrogeologic Column for I-75-TW.

**Figure I-9.** Generalized Hydrogeologic Column for IWSD-TW.

**Figure I-10.** Generalized Hydrogeologic Column for LAB-TW.

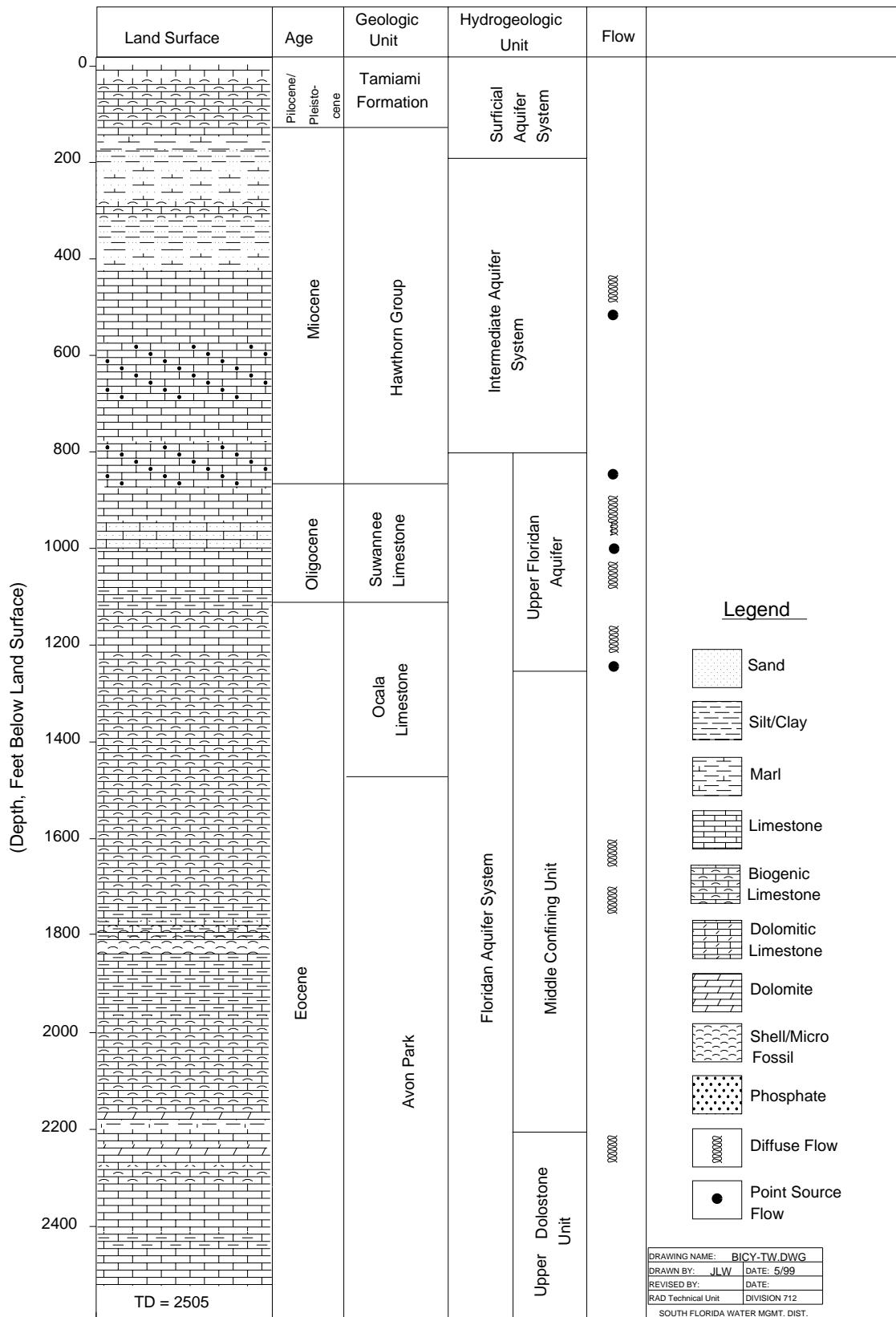


Figure I-11. Generalized Hydrogeologic Column for BICY-TW.

geophysical logging services. A summary of the geophysical logging program for each site is listed in **Table I-1**.

Table I-1. Summary of Geophysical Log Suites.

Site Name	SFWMD Geophy-Log #	Date	Run #	Logging Company	Elevation (ft., NGVD)	Logged Interval (ft.) bls	Caliper	Natural Gamma SP	Res. SP/16"/64"	Res. Lateral	Induction	Density	Neutron	Sonic	Flow-Meter	Temp	Fluid Res.	Video
L-2 Canal	051-0000019	12/30/93	1	Florida Geophysical	17.35	120-742	x	x	x		x	x	x	x				
		1/28/94	2	Florida Geophysical		700-2236	x	x	x		x	x	x	x	x	x	x	
		2/25/94	3	Florida Geophysical		720-2210	x								x	x	x	
I-75 Canal	021-0000066	8/27/94	1	SFWMD	9.87	490-922'	x	x	x	x	x		x		x	x	x	
		10/13/94	2	SFWMD		490-1360	x	x	x	x	x				x	x	x	x
		12/13/94	3	Florida Geophy.		875-2371	x	x	x		x	x	x	x	x	x	x	
Immokalee Water & Sewer District	021-0000090	11/10/95	1	RST Enterprises	31.67	300-850	x	x	x	x	x							
		12/7/99	2	RST Enterprises		780-1270	x	x	x	x	x							
		1/25/96	3	Florida Geophysical		1020-2354	x	x	x		x	x	x	x	x	x	x	
LaBelle	051-0000031	3/6/97	1	Western-Atlas	18.16	204-1100	x	x	x		x	x	x	x	x	x		
		3/25/97	2	Western-Atlas		678-2501	x	x	x		x	x	x	x	x	x	x	
BICY Preserve	021-0000103	11/24/97	1	Western-Atlas	4.01	452-1500	x	x	x		x	x	x	x	x	x	x	
		1/23/98	2	Western-Atlas		700-2500	x	x	x		x	x	x	x	x	x	x	

Straddle-packer pumping tests were performed to characterize the water quality of discrete horizons within the FAS. Intervals having total dissolved solids (TDS) content greater than 10,000 mg/l were not considered for further aquifer hydraulic characterization or long-term monitoring. Formation waters with TDS concentrations greater than 10,000 mg/l are not considered potential sources of drinking water (USEPA). **Table I-2** summarizes the water quality data of tested intervals. Based on the water quality data from the five locations, upper Floridan waters are nonpotable. Generally, water quality degrades with increasing depth and from east to west as the water moves along the flow path toward the Gulf of Mexico.

Table I-2. Water Quality Data from Floridan Aquifer System Wells.

Identifier	Depth Interval (ft. bsl)	Sample Date	Na (mg/l)	K (mg/l)	Ca (mg/l)	Mg (mg/l)	Cl (mg/l)	Br (mg/l)	ALKA (mg/l)	HCO3 (mg/l)	SO4 (mg/l)	Fl (mg/l)	TDS (mg/l)	Conductance (umhos/cm)	Temp °C	pH (S.U.)	Total Cation	Total Anion	%Error
L-2 Canal Drill Site (Hendry County)																			
L2-TW ^a	1266-1284	02/07/94	307.0	15.9	72.5	71.1	490.7	ND ^b	90.7	110.6	365.9	ND	1370	2240	27.30	7.00	23.23	23.27	-0.10%
L2-TW	1442-1494	02/09/94	257.0	11.8	77.5	70.5	444.7	ND	90.1	109.9	321.6	ND	1370	2230	26.40	7.10	21.15	21.04	0.26%
L2-TW	1400-1810	01/10/97	366.0	17.0	88.3	88.8	755.0	2.2	91.5	111.6	347.2	0.846	1900	3371	27.35	7.51	28.75	30.43	-2.84%
L2-TW	1652-1704	02/09/04	535.0	23.6	101.0	103.9	881.6	ND	91.4	111.5	439.4	ND	2160	3400	25.40	7.10	37.47	35.84	2.21%
L2-TW	1890-1908	02/04/94	1615.0	46.3	204.0	224.2	3083.8	ND	95.6	116.6	424.0	ND	5550	9990	25.60	7.30	100.07	97.73	1.18%
L2-TW	2072-2124	02/01/94	5910.0	197.4	476.0	678.0	10734.0	ND	101.7	124.0	1358.8	ND	19100	30800	26.00	7.00	341.68	333.13	1.27%
I-75 Canal Drill Site (Collier County)																			
I75-TW	495-550	09/19/94	1035.0	39.5	140.0	170.0	1630.0	ND	195.0	237.8	532.0	1.990	3640	6230	28.62	7.01	67.25	61.06	4.82%
I75-TW	654-710	09/20/94	1092.0	40.5	190.0	171.0	1754.0	ND	160.0	195.1	558.0	1.040	3890	7150	28.29	7.18	72.47	64.35	5.93%
I75-TW	695-760	04/13/95	902.0	36.7	157.0	152.0	1529.0	ND	174.0	212.1	486.0	1.200	3410	5790	28.90	7.90	60.78	56.79	3.39%
I75-PW	690-780	11/26/96	1060.0	42.9	169.0	157.0	1848.0	ND	151.8	185.1	562.0	0.840	3910	6690	28.39	7.01	68.93	66.91	1.49%
I75-TW	905-1050	04/13/95	1820.0	65.3	246.0	263.0	3558.0	ND	159.0	193.9	630.0	0.906	6750	11560	29.23	7.11	115.04	116.71	-0.72%
I75-PW	890-1040	01/23/97	2080.0	80.4	274.0	304.0	4020.8	14.0	160.9	196.2	665.3	1.010	6900	12410	29.67	7.02	131.76	130.72	0.40%
I75-TW	1158-1185	12/30/94	6050.0	200.0	400.0	638.0	10151.0	36.0	165.0	201.2	1336.0	0.787	17600	25390	29.67	6.89	341.38	317.96	3.55%
I75-TW	1287-1318	01/25/94	9780.0	321.0	491.0	994.0	14330.0	55.0	153.6	187.3	1745.0	0.771	27300	35650	29.42	6.91	540.84	444.38	9.79%
I75-TW	1469-1524	12/21/94	11460.0	432.0	620.0	1368.0	19037.0	70.0	110.0	134.1	2259.0	0.414	35100	45050	30.00	6.84	653.20	587.16	5.32%
I75-TW	1851-1901	12/20/94	11260.0	418.0	600.0	1334.0	19281.0	72.0	108.0	131.7	2136.0	0.469	34900	45080	30.16	6.81	640.35	591.47	3.97%
I75-TW	2195-2251	12/19/94	11520.0	428.0	620.0	1354.0	19262.0	72.0	108.0	131.7	2511.0	0.478	34600	46610	29.56	6.91	654.56	598.74	4.45%
I75-TW	2300-2350	04/13/95	11200.0	407.0	533.0	1235.0	19398.0	ND	105.5	128.6	2531.0	0.490	35700	46360	30.66	7.21	625.96	602.05	1.95%
I75-TW	2300-2350	12/13/96	10200.0	454.0	482.0	1124.0	20068.0	100.0	94.0	114.6	2800.0	0.424	34900	52901	30.24	7.62	572.08	627.57	-4.63%
Immokalee Water & Sewer District Drill Site (IWSD) (Collier County)																			
IWSD-PW ^c	1060-1140	02/05/97	579.0	26.6	138.8	122.0	1103.0	4.5	110.9	135.2	483.3	0.996	2830	4980	29.45	7.42	43.23	43.50	-0.32%
IWSD-TW	1070-1165	06/25/96	635.9	30.7	129.3	111.0	1172.8	3.7	111.6	136.1	636.0	1.040	2750	4810	31.14	7.53	44.39	48.66	-4.58%
IWSD-TW	1700-1774	02/26/96	783.9	44.3	136.6	129.4	1162.2	3.5	115.4	140.7	616.0	1.370	3090	5000	30.33	7.45	53.23	48.03	5.13%
IWSD-TW	1752-1880	06/25/96	873.2	41.8	167.4	160.2	1697.0	5.2	117.0	142.7	704.0	1.270	3980	6750	31.37	7.98	61.13	65.00	-3.07%

Table I-2. (Continued) Water Quality Data from Floridan Aquifer System Wells.

Identifier	Depth Interval (ft. bsl)	Sample Date	Na (mg/l)	K (mg/l)	Ca (mg/l)	Mg (mg/l)	Cl (mg/l)	Br (mg/l)	ALKA (mg/l)	HCO3 (mg/l)	SO4 (mg/l)	Fl (mg/l)	TDS (mg/l)	Conductance (umhos/cm)	Temp °C	pH (S.U.)	Total Cation	Total Anion	%Error
IWSD-TW	1876-1950	02/22/96	1897.5	102.7	246.5	288.2	3107.0	10.2	112.4	137.0	1032.0	1.330	6570	10700	31.04	7.33	121.81	111.58	4.39%
IWSD-TW	2134-2354	06/25/96	12140.0	459.0	1418.0	1348.0	18155.0	53.0	112.9	137.7	4322.0	0.930	35100	50060	30.94	7.68	721.94	605.11	8.80%
LaBelle Drill Site (Hendry County)																			
LAB-TW	490-540	03/11/97	691.0	40.8	66.7	63.8	881.0	1.5	112.9	137.7	426.7	2.200	2270	3880	27.09	7.70	40.11	36.13	5.23%
LAB-TW	850-920	04/01/97	383.0	21.4	91.9	74.2	640.0	2.1	91.1	111.1	376.3	1.060	1680	2810	29.23	7.67	28.58	27.79	1.40%
LAB-TW	670-840	12/10/97	460.0	17.0	92.0	74.0	700.0	1.3	90.0	109.7	350.0	0.810	1800	2777	29.94	7.78	31.76	28.89	4.74%
LAB-PW	670-840	08/14/97	390.0	17.0	78.0	62.0	591.0	ND	86.6	105.6	351.6	0.590	1590	2716	29.50	7.77	27.09	25.75	2.53%
LAB-TW	1145-1270	05/02/97	242.0	18.8	73.7	70.3	429.0	0.2	94.6	115.4	349.2	1.160	1300	2240	30.12	7.65	21.05	21.33	-0.66%
LAB-TW	1140-1460	12/10/97	330.0	16.0	81.0	70.0	500.0	0.9	88.0	107.3	350.0	1.200	1500	2177	30.54	7.69	25.18	23.22	4.04%
LAB-PW	1140-1465	10/09/97	310.0	18.0	75.0	72.0	566.4	ND	83.8	102.2	358.3	1.100	1440	2466	31.17	7.64	24.23	25.17	-1.90%
LAB-TW	1650-1760	12/10/97	5100.0	160.0	450.0	570.0	9900.0	18.0	93.0	113.4	1200.0	0.550	18000	26582	32.83	7.17	296.06	306.38	-1.71%
Big Cypress Preserve Drill Site (BICY) (Collier County)																			
BICY-TW	455-534	12/15/97	1100.0	49.0	120.0	150.0	1850.0	3.5	150.0	182.9	500.0	0.960	4000	6428	25.45	7.46	67.73	65.69	1.53%
BICY-TW	455-540	05/27/98	1080.0	44.6	116.0	140.0	1807.0	3.5	152.8	186.3	505.0	0.990	3800	5976	27.73	7.41	65.69	64.64	0.81%
BICY-TW	838-1000	05/27/98	1550.0	61.4	165.0	195.0	2946.0	ND	139.7	170.3	610.8	0.941	5460	8647	28.02	7.50	94.36	98.66	-2.23%
BICY-TW	1195-1295	12/18/97	2200.0	99.0	170.0	260.0	3600.0	6.6	170.0	207.3	730.0	0.930	7000	11828	26.71	7.46	128.52	120.28	3.31%
BICY-TW	1550-1785	06/05/98	8490.0	268.0	587.0	923.0	15244.2	ND	137.9	168.1	1421.8	1.140	26500	42225	28.69	7.50	482.49	462.46	2.12%
BICY-TW	1790-1910	02/02/98	11000.0	470.0	660.0	1100.0	19000.0	66.0	130.0	158.5	2400.0	0.160	33000	50941	28.32	7.13	614.89	589.39	2.12%
BICY-TW	2260-2500	01/29/98	12000.0	490.0	670.0	1200.0	20000.0	ND	130.0	158.5	2500.0	2.000	34000	51767	26.74	7.28	667.63	618.95	3.78%
BICY-TW	2260-2505	01/28/99	11300.0	400.0	794.0	1180.0	20790.0	ND	190.5	232.3	2479.0	1.120	35800	52647	26.86	6.08	638.50	641.96	-0.27%

- a. TW - test well
- b. ND - no data
- c. PW - production well

Water samples were collected during straddle packer tests and monitor well development. The University of Waterloo provided analytical services for the determination of stable isotope compositions including oxygen, hydrogen, carbon, sulfur, chlorine and apparent carbon-14 age. Isotope background information is presented in **Table I-3**. The information obtained through the acquisition of isotopic data will help to better define the ground water circulation patterns and may identify recharge and discharge areas within the FAS. This information will also help to identify and assist in the mapping of ASR and reverse osmosis (RO) intervals within the upper FAS. Kaufmann and Bennett summarize the results of the FAS isotope study. The stable isotope data are summarized in **Table I-4**.

During the drilling of the test production wells, 4 inch diameter rock cores were recovered from the upper FAS. Conventional coring methods were employed using a 4-inch diameter, 10 to 20 foot long, diamond-tipped core barrel. Core recoveries ranged from 0 to 90 percent. A total of thirty-four oriented cores were sent to Core Laboratories in Midland, Texas to determine horizontal and vertical permeability, porosity, grain density, and lithologic character. The petrophysical data are summarized in **Table I-6**. The abbreviations used in **Table I-6** are explained in **Table I-5**.

The ten multicompleted wells constructed under these two contracts were used to conduct eight aquifer performance tests. These tests were performed to determine aquifer parameters and water quality of distinct horizons within the upper FAS. Type-curve analyses of the displacement data indicate semiconfined conditions for 7 out of 8 of the intervals tested. Transmissivity varies greatly and ranges from 10,960 gals/day/ft to 268,700 gals/day/ft. No single upper Floridan transmissive horizon was correlated among the five locations. The hydraulic character of the Floridan seems to be controlled by localized subsurface conditions. Localized hydraulic characteristics may be a function of the original depositional fabric or duration of subaerial exposure. Flow tends to develop at, or proximal to, formation boundaries, zones within a stratigraphic unit altered by diagenetic factors or near lithologic contacts within a stratigraphic unit. The hydraulic data are summarized in **Table I-7**.

Shortly after the construction of the monitor wells, a monthly potentiometric head monitoring program was established. Pressures recorded at the wellhead are converted to equivalent freshwater head and are added to the measuring point elevation to obtain a potentiometric head elevation referenced to the National Geodetic Vertical Datum (NGVD) of 1929. The long-term potentiometric data from various monitor horizons are summarized by the hydrographs shown in **Figures I-12** through **I-16**. Average upper Floridan potentiometric heads range between 35 feet and 62 feet NGVD with the flow direction to the west-southwest. Potentiometric data for the lower Floridan (upper dolostone unit) is limited but suggests a relatively flat surface (low gradient) with no discernible flow direction.

Table I-3. Isotope Background Information.

Stable Isotopes
Oxygen: The reporting of the stable oxygen ratio in natural water is as follows: Del ^{18}O per mill = $[(R_{\text{Sample}} - R_{\text{SMOW}})/R_{\text{SMOW}}] \times 1000 \text{ ‰}$ Where $R = ^{18}\text{O}/^{16}\text{O}$ ratio and SMOW (standard mean ocean water) is the referenced standard.
Hydrogen: The reporting of the hydrogen ratio in natural water is as follows: Del ^2H per mil = $[(R_{\text{Sample}} - R_{\text{SMOW}})/R_{\text{SMOW}}] \times 1000 \text{ ‰}$ Where $R = ^2\text{H}/^1\text{H}$ ratio and SMOW (standard mean ocean water) is the referenced standard.
Chlorine: The reporting of the chlorine ratio in natural water is as follows: Del ^{37}Cl per mill = $[(R_{\text{Sample}} - R_{\text{SMOC}})/R_{\text{SMOC}}] \times 1000 \text{ ‰}$ Where $R = ^{37}\text{Cl}/^{35}\text{Cl}$ ratio and SMOC (standard mean ocean chloride) is the referenced standard.
Sulfur: The reporting of the sulfur ratios in natural water is as follows: Del ^{34}S per mill = $[(R_{\text{Sample}} - R_{\text{CDT}})/R_{\text{CDT}}] \times 1000 \text{ ‰}$ Where $R = ^{34}\text{S}/^{32}\text{S}$ ratio and the standard is the sulfur isotope ratio of reduced sulfur (FeS; Troilite) in the Canyon Diablo meteorite (CDT).
Carbon: The reporting of the carbon ratio in natural water is as follows: Del ^{13}C per mill = $[(R_{\text{Sample}} - R_{\text{PDB}})/R_{\text{PDB}}] \times 1000 \text{ ‰}$ Where $R = ^{13}\text{C}/^{12}\text{C}$ ratio and the standard is the carbon isotope ratio derived from the CO ₂ liberated from belemnite of the Coastal Plain Cretaceous PeeDee Formation of South Carolina.
Radioisotopes
The activity of "modern carbon" is defined as 95% of the ^{14}C in the 1950 NBS oxalic acid standard Del ^{14}C is defined as the relative difference between the absolute standard activity and the sample activity correct for age. Del $^{14}\text{C} = (A_s/A_{\text{abs}} - 1) * 1000 \text{ ‰}$ Where A_s is the activity of the sample and A_{abs} is the activity of the standard. The conventional radiocarbon age (C^{14} Age) is calculated in the following manner: $t = -8033 \ln (A_{\text{sn}}/A_{\text{on}})$ Where A_{sn} is the normalized sample activity and A_{on} is the normalized oxalic acid activity (count rate) Further information concerning radiocarbon dating can be found in Stuiver and Polach (1977), Radiocarbon v.19: pp. 355-363. Information on the Tamer's method for radiocarbon age corrections can be found in Tamer (1975), Geophysical Surveys v.2 pp. 217-239.

Table I-4. Stable Isotope Data from Florida Aquifer System Wells, Lower West Coast Planning Area.

Identifier	Depth	Sample Date	De ¹⁸ O	De ¹³ D	De ³⁷ Ci	De ¹³ C	De ³⁴ S	De ¹⁴ C	C-14 Age	Percent Modern Carbon (pmc)	Tamer's Corrected Age
L-2 Canal Drill Site (Hendry County)											
L2-TW ^a	1400-1810	01/10/97	-1.56	-8.74	-0.16	-2.89	22.24	-980	-31250	2.03	-28706
I-75 Canal Drill Site (Collier County)											
I75-TW	695-760	04/13/95	-1.05	-6.51	0.11	-3.97	23.08				
I75-PW ^b	690-780	11/26/96				-4.24		-993	-40130	0.67	-38742
I75-TW	905-1050	04/13/95	-1.05	-6.45	0.24	-2.64	21.99				
I75-TW	1158-1185	12/30/94	0.57	2.61	0.19	-1.87	20.44				
I75-TW	1287-1318	01/25/94	0.10	5.27	-0.06	-1.43	20.22				
I75-TW	1469-1524	12/21/94	0.67	2.97	0.15	-1.42	20.81				
I75-TW	1851-1901	12/20/94	0.54	4.28	-0.01	-1.59	20.86				
I75-TW	2195-2251	12/19/94	0.60	2.46	0.19	-1.35	20.86				
I75-TW	2300-2350	04/13/95	0.65	1.16	0.01	-1.78	21.11		-13429	19.70	-14318
I75-TW	2300-2350	12/13/96				-2.44		-809	-13267	19.07	
Immokalee Water & Sewer District Drill Site (IWSD) (Collier County)											
IWSD-TW	1065-1165	06/25/96	-1.69	-4.72	0.00	-2.72	21.32	-988	-36080	1.11	-33872
IWSD-TW	1700-1774	02/26/96	-1.44	-6.04	-0.27	-1.62	21.16				
IWSD-TW	1700-1880	06/25/96	-1.61	-2.38	0.14	-2.58	21.44				
IWSD-TW	1876-1950	02/22/96	-1.35	-6.42	-0.14	-1.13	20.80				
IWSD-TW	2100-2354	06/25/96	0.12	3.72	0.01	-2.88	20.78	-949	-24150	4.92	-21335
LaBelle Drill Site (Hendry County)											
LAB-TW	490-540	03/11/97	-1.47	-7.91	0.01	-3.98	21.64	-986	-34140	1.42	-33380
LAB-TW	670-840	12/10/97	-1.70	-8.07	-0.07	-3.60	21.75	-934	-40910	0.61	
LAB-TW	1145-1270	05/02/97	-1.49	-7.34	-0.23	-1.55	22.25	-993	-39250	0.75	-37014
LAB-TW	1140-1460	12/10/97	-1.68	15.33	-0.12	-1.39	22.06	-993	-40680	0.63	
LAB-TW	1650-1720	12/10/97	-0.54	-7.37	0.09	-1.58	20.33	-992	-38690	0.80	
Big Cypress Preserve Drill Site (BICY) (Collier County)											
BICY-TW	455-534	12/15/97	-1.54	10.71	-0.01	-2.35	22.50	-990	-37650	0.92	
BICY-TW	455-540	05/27/98	-1.52	-7.13	0.08	-3.40	21.50	-979	-31670	1.93	
BICY-TW	838-980	05/27/98	-1.31	-8.65	-0.06	-2.70	23.20	-991	-37730	0.91	
BICY-TW	1195-1295	12/18/97	-1.20	-4.55	-0.26	-2.10	21.45	-995	-43310	0.45	
BICY-TW	1550-1785	06/05/98	0.25	-0.16	0.21	-1.10	20.64	-996	-43340	0.45	
BICY-TW	1790-1910	02/02/98	0.68	1.22	0.05	-1.47	20.30	-997	-46500	0.31	
BICY-TW	2260-2500	01/29/98	0.74	-1.06	-0.13	-2.03	20.30				

a. TW - test well

b. PW - production well

Table I-5. Explanation of Abbreviations Used in the Core Analysis Table (**Table I-6**).

Abbreviation	Description
brec	Breccia
Chlk, chlky	Chalk (-y)
Dol, dol	Dolomite (-ic)
foss	Fossil (iferous)
frg	Fragmented
gry	Gray
hvy	Heavy
lam	Lamina (-ated, -tions)
lim	Limestone
lmey	Limey
lt	Light
min	Mineral
pp	Pin-point (Porosity)
rk frag	Rock Fragments
sl	Slightly
slt, slty	Silt (-y)
sndy	Sandy
tn	Tan
tr	Trace
v	Very

Table I-6. Core Analysis Results.

Core #	Sample #	Depth (ft.) bls	Horizontal Permeability (Kair-md)	Vertical Permeability (Kair-md)	Vertical/Horizon Ratio	Porosity Helium (%)	Grain Density (g/cm ³)	Description
L-2 Canal Drill Site (Hendry County)								
1	1	830.4	76.40	65.4	0.856	40.1	2.67	Lim, pp
	2	831.2	72.56	67.0	0.923	39.8	2.66	Lim, pp
	3	832.0	52.03	43.3	0.832	38.0	2.64	Lim, pp, foss
	4	833.4	48.09	29.1	0.605	37.6	2.63	Lim, pp
	5	834.8	21.81	10.9	0.500	36.0	2.64	Lim, pp
	6	835.2	7.15			34.9	2.67	Lim, pp
	7	836.9	77.98	55.7	0.714	39.4	2.67	Lim, pp
	8	837.5	56.23	46.0	0.818	38.4	2.70	Lim, pp
	9	838.4	97.82	91.6	0.936	40.2	2.68	Lim, pp
	10	839.9	114.74	89.1	0.777	39.3	2.66	Lim, pp
Average:			62.5	55.3	0.774	38.4	2.66	
Standard Deviation:			32.6	26.4	0.145	1.8	0.02	
2	11	1020.3	158.46	9.8	0.062	35.7	2.68	Ls, pp, lam
	12	1021.1	68.20	20.3	0.298	35.9	2.70	Lim, sl vug, foss
	13	1022.5	50.67	34.6	0.683	36.1	2.69	Lim, sl vug, foss
	14	1023.5	40.47	23.4	0.578	36.1	2.66	Lim, sl vug, foss
	15	1024.9	21.90	13.6	0.621	34.9	2.67	Lim, sl vug, foss
	16	1025.5	42.29	28.8	0.681	36.4	2.69	Lim, sl vug, foss
	17	1026.6	69.51	29.5	0.424	36.7	2.66	Lim, sl vug, foss
	18	1027.8	51.70	1.6	0.031	20.1	2.71	Lim, sl vug, foss
	19	1028.4	304.21	21.4	0.070	38.1	2.67	Lim, sl vug, foss
	20	1029.2	317.68	9.7	0.031	38.1	2.64	Lim, sl vug, foss
Average:			112.5	19.3	0.348	34.8	2.68	
Standard Deviation:			110.9	10.4	0.283	5.3	0.02	
3	21	1190.3	23.65	16.8	0.710	32.1	2.76	Lim, sl vug, foss
	22	1191.2	70.55	1.5	0.021	41.3	2.78	Lim, sl vug, foss
	23	1192.2	63.67	39.0	0.612	38.7	2.67	Lim, sl vug, foss
	24	1192.9	21.84	13.8	0.632	37.2	2.67	Lim, sl vug, foss
	25	1195.0	37.90	17.6	0.464	37.2	2.69	Lim, pp
	26	1195.8	72.30	3.3	0.046	38.7	2.70	Lim, pp
	27	1196.5	65.01	42.2	0.649	43.5	2.75	Lim, pp
	28	1196.0	169.42	51.6	0.305	42.5	2.74	Lim, pp, lam
	29	1197.0	106.27	12.6	0.119	42.9	2.74	Lim, pp, lam
	Average:			70.1	22.0	0.395	39.3	2.72
Standard Deviation:			45.8	17.8	0.278	3.6	0.04	
4	30	1330.5	33.30	19.3	0.580	28.9	2.76	Lim, pp
	31	1331.3	39.99	28.0	0.700	27.8	2.78	Lim, pp
	32	1332.8	220.91	190.0	0.860	36.6	2.67	Lim, pp
	33	1333.8	108.38	86.8	0.801	33.9	2.67	Lim, pp
	34	1334.8	505.59	165.0	0.326	34.4	2.69	Lim, pp
	35	1335.8	184.22			35.5	2.70	Lim, pp
	36	1336.4	145.83	85.2	0.584	32.3	2.75	Lim, sl vug

Table I-6. (Continued) Core Analysis Results.

Core #	Sample #	Depth (ft.) bls	Horizontal Permeability (Kair-md)	Vertical Permeability (Kair-md)	Vertical/Horizon Ratio	Porosity Helium (%)	Grain Density (g/cm ³)	Description
	37	1337.8	79.10	47.3	0.598	28.2	2.74	Lim, sl vug
	38	1338.6	66.37	55.6	0.838	27.3	2.72	Lim, sl vug
	Average:		153.7	84.7	0.661	31.7	2.72	
	Standard Deviation:		146.6	62.4	0.177	3.6	0.04	
5	39	1480.5	154.30			39.6	2.70	Lim, pp
	40	1481.5	38.58			30.7	2.70	Lim, pp
	41	1482.5	443.37	310.0	0.699	26.7	2.71	Lim, pp
	42	1483.5	185.16			35.2	2.70	Lim, pp
	43	1484.5	18.96			22.3	2.74	Lim, pp
	Average:		168.1			30.9	2.71	
	Standard Deviation:		169.8			6.8	0.02	
6	44	1580.4	118.00	112.0	0.949	31.8	2.70	Lim, pp
	45	1581.4	108.35	83.6	0.772	29.2	2.70	Lim, pp
	46	1581.9	94.15	66.0	0.701	33.8	2.68	Lim, pp
	47	1583.2	593.02	75.5	0.127	32.7	2.71	Lim, pp
	Average:		228.4	84.3	0.637	31.9	2.70	
	Standard Deviation:		243.3	19.8	0.356	2.0	0.01	
7	48	1630.7	51.90	26.5	0.511	32.0	2.68	Lim, sl vug
	49	1631.2	226.00	43.2	0.191	30.3	2.69	Lim, pp
	50	1632.5	202.00			33.8	2.71	Lim, pp
	Average:		160.0	34.9	0.351	32.0	2.69	
	Standard Deviation:		94.4			1.8	0.02	
8	51	1710.3	115.00	45.3	0.394	34.3	2.69	
	52	1710.8	129.96			34.6	2.71	
	Average:		122.5			34.5	2.70	
	Standard Deviation:		10.6			0.2	0.0	
I-75 Canal Drill Site (Collier County)								
1	1	830.4	76.40	65.4	0.856	40.1	2.67	Lim, pp
	2	831.2	72.56	67.0	0.923	39.8	2.66	Lim, pp
	3	832.0	52.03	43.3	0.832	38.0	2.64	Lim, pp, foss
	4	833.4	48.09	29.1	0.605	37.6	2.63	Lim, pp
	5	834.8	21.81	10.9	0.500	36.0	2.64	Lim, pp
	6	835.2	7.15			34.9	2.67	Lim, pp
	7	836.9	77.98	55.7	0.714	39.4	2.67	Lim, pp
	8	837.5	56.23	46.0	0.818	38.4	2.70	Lim, pp
	9	838.4	97.82	91.6	0.936	40.2	2.68	Lim, pp
	10	839.9	114.74	89.1	0.777	39.3	2.66	Lim, pp
	Average:		62.5	55.3	0.774	38.4	2.66	
	Standard Deviation:		32.6	26.4	0.145	1.8	0.02	
2	11	1020.3	158.46	9.8	0.062	35.7	2.68	Ls, pp, lam
	12	1021.1	68.20	20.3	0.298	35.9	2.70	Lim, sl vug, foss
	13	1022.5	50.67	34.6	0.683	36.1	2.69	Lim, sl vug, foss
	14	1023.5	40.47	23.4	0.578	36.1	2.66	Lim, sl vug, foss
	15	1024.9	21.90	13.6	0.621	34.9	2.67	Lim, sl vug, foss

Table I-6. (Continued) Core Analysis Results.

Core #	Sample #	Depth (ft.) bls	Horizontal Permeability (Kair-md)	Vertical Permeability (Kair-md)	Vertical/Horizon Ratio	Porosity Helium (%)	Grain Density (g/cm ³)	Description
1	16	1025.5	42.29	28.8	0.681	36.4	2.69	Lim, sl vug, foss
	17	1026.6	69.51	29.5	0.424	36.7	2.66	Lim, sl vug, foss
	18	1027.8	51.70	1.6	0.031	20.1	2.71	Lim, sl vug, foss
	19	1028.4	304.21	21.4	0.070	38.1	2.67	Lim, sl vug, foss
	20	1029.2	317.68	9.7	0.031	38.1	2.64	Lim, sl vug, foss
Average:			112.5	19.3	0.348	34.8	2.68	
Standard Deviation:			110.9	10.4	0.283	5.3	0.02	
3	21	1190.3	23.65	16.8	0.710	32.1	2.76	Lim, sl vug, foss
	22	1191.2	70.55	1.5	0.021	41.3	2.78	Lim, sl vug, foss
	23	1192.2	63.67	39.0	0.612	38.7	2.67	Lim, sl vug, foss
	24	1192.9	21.84	13.8	0.632	37.2	2.67	Lim, sl vug, foss
	25	1195.0	37.90	17.6	0.464	37.2	2.69	Lim, pp
	26	1195.8	72.30	3.3	0.046	38.7	2.70	Lim, pp
	27	1196.5	65.01	42.2	0.649	43.5	2.75	Lim, pp
	28	1196.0	169.42	51.6	0.305	42.5	2.74	Lim, pp, lam
	29	1197.0	106.27	12.6	0.119	42.9	2.74	Lim, pp, lam
Average:			70.1	22.0	0.395	39.3	2.72	
Standard Deviation:			45.8	17.8	0.278	3.6	0.04	
4	30	1330.5	33.30	19.3	0.580	28.9	2.76	Lim, pp
	31	1331.3	39.99	28.0	0.700	27.8	2.78	Lim, pp
	32	1332.8	220.91	190.0	0.860	36.6	2.67	Lim, pp
	33	1333.8	108.38	86.8	0.801	33.9	2.67	Lim, pp
	34	1334.8	505.59	165.0	0.326	34.4	2.69	Lim, pp
	35	1335.8	184.22			35.5	2.70	Lim, pp
	36	1336.4	145.83	85.2	0.584	32.3	2.75	Lim, sl vug
	37	1337.8	79.10	47.3	0.598	28.2	2.74	Lim, sl vug
	38	1338.6	66.37	55.6	0.838	27.3	2.72	Lim, sl vug
Average:			153.7	84.7	0.661	31.7	2.72	
Standard Deviation:			146.6	62.4	0.177	3.6	0.04	
5	39	1480.5	154.30			39.6	2.70	Lim, pp
	40	1481.5	38.58			30.7	2.70	Lim, pp
	41	1482.5	443.37	310.0	0.699	26.7	2.71	Lim, pp
	42	1483.5	185.16			35.2	2.70	Lim, pp
	43	1484.5	18.96			22.3	2.74	Lim, pp
Average:			168.1			30.9	2.71	
Standard Deviation:			169.8			6.8	0.02	
6	44	1580.4	118.00	112.0	0.949	31.8	2.70	Lim, pp
	45	1581.4	108.35	83.6	0.772	29.2	2.70	Lim, pp
	46	1581.9	94.15	66.0	0.701	33.8	2.68	Lim, pp
	47	1583.2	593.02	75.5	0.127	32.7	2.71	Lim, pp
Average:			228.4	84.3	0.637	31.9	2.70	
Standard Deviation:			243.3	19.8	0.356	2.0	0.01	
7	48	1630.7	51.90	26.5	0.511	32.0	2.68	Lim, sl vug
	49	1631.2	226.00	43.2	0.191	30.3	2.69	Lim, pp

Table I-6. (Continued) Core Analysis Results.

Core #	Sample #	Depth (ft.) bls	Horizontal Permeability (Kair-md)	Vertical Permeability (Kair-md)	Vertical/Horizon Ratio	Porosity Helium (%)	Grain Density (g/cm ³)	Description
	50	1632.5	202.00			33.8	2.71	Lim, pp
	Average:		160.0	34.9	0.351	32.0	2.69	
	Standard Deviation:		94.4			1.8	0.02	
8	51	1710.3	115.00	45.3	0.394	34.3	2.69	
	52	1710.8	129.96			34.6	2.71	
	Average:		122.5			34.5	2.70	
	Standard Deviation:		10.6			0.2	0.0	
IWSD Drill Site (Collier County)								
1	1	882.9	185.42	115.0	0.620	19.5	2.70	Lim, vug
	2	883.7	171.22	97.3	0.568	23.1	2.70	Lim, pp
	3	884.5	76.20	44.8	0.588	22.1	2.69	Lim, pp
	4	885.2	316.00	18.2	0.058	19.8	2.70	Lim, pp
	5	886.4	42.20	37.4	0.886	18.4	2.69	Lim, pp
	6	887.8	52.10	24.5	0.470	19.3	2.70	Lim, sl vug
	7	888.3	69.40	32.1	0.463	23.2	2.70	Lim, sl vug
	8	889.1	1296.00			32.9	2.71	Lim, sl vug
	Average:		276.1	52.8	0.5	22.3	2.7	
	Standard Deviation:		494.57	10.46	0.30	5.35	0.01	
2	9	955.1	240.52			23.7	2.69	Lim, pp
	10	956.3	3744.00			34.7	2.69	Lim, pp
	11	957.0	2046.60	1733.0	0.847	35.0	2.71	Lim, pp
	12	958.4	2492.10			35.1	2.69	Lim, pp
	13	959.5	3523.50			35.4	2.69	Lim, pp
	14	961.0	3902.20			35.9	2.69	Lim, pp
	15	961.6	13507.00			39.1	2.70	Lim, vug
	Average:		4208.0			34.1	2.7	
	Standard Deviation:		4293.51			4.83	0.01	
3	16	1040.9	633.36			25.2	2.70	Lim, pp
	17	1041.5	141.78	1041.0	7.342	25.3	2.68	Lim, pp, foss
	18	1042.7	483.76	301.0	0.622	29.8	2.70	Lim, pp
	19	1043.6	3088.30	1899.0	0.615	31.5	2.74	Lim, pp
	20	1044.2	6132.60	4123.0	0.672	34.7	2.78	Lim, vug, foss
	21	1045.5	3043.10	944.0	0.310	33.0	2.79	Lim, vug, foss
	22	1046.5	3719.96	721.0	0.194	32.4	2.80	Lim, vug, foss
	23	1047.7	3546.40	1955.0	0.551	37.8	2.83	Lim, vug, foss
	24	1048.3	7179.90	1342.0	0.187	36.6	2.82	Lim, vug, foss
	25	1049.2	9539.00	1255.0	0.132	35.0	2.85	Lim, vug, foss
	Average:		3750.8	1509.0	1.2	32.1	2.8	
	Standard Deviation:		3079.22	1112.14	2.32	4.32	0.06	
4	26	1060.8	14720.00			26.3	2.72	Lim, vug, foss
	27	1061.5	10018.00			25.8	2.71	Lim, vug, foss
	Average:		12369.0			26.1	2.7	
5	28	1080.7	1621.10	387.0	0.239	27.7	2.73	Lim, pp
	29	1081.6	12.41	1.2	0.093	22.9	2.71	Lim, sl vug

Table I-6. (Continued) Core Analysis Results.

Core #	Sample #	Depth (ft.) bls	Horizontal Permeability (Kair-md)	Vertical Permeability (Kair-md)	Vertical/Horizon Ratio	Porosity Helium (%)	Grain Density (g/cm ³)	Description
5	30	1082.5	16.90	844.0	49.941	28.8	2.79	Lim, sl vug
	31	1084.0	241.33	9.3	0.039	28.1	2.72	Lim, vug, foss
	32	1085.0	236.98	25.0	0.105	28.7	2.70	Lim, vug, foss
	33	1086.7	34.82	21.9	0.629	26.0	2.71	Lim, sl vug, foss
	34	1087.8	41.04	42.6	1.038	27.0	2.71	Lim, pp
	35	1088.9	280.50			34.2	2.71	Lim, sl vug
	Average:		310.6	190.1	7.4	27.9	2.7	
	Standard Deviation:		541.48	319.39	18.74	3.18	0.03	
	36	1090.2	106.45			25.7	2.72	Lim, sl vug, foss
	37	1091.4	230.52	158.0	0.685	36.2	2.69	Lim, pp
6	38	1092.7	386.75	394.0	1.019	40.7	2.69	Lim, pp
	39	1093.6	182.14	162.0	0.889	39.0	2.69	Lim, pp
	40	1094.5	149.74	146.0	0.975	41.2	2.69	Lim, pp
	41	1095.7	321.69	327.0	1.017	36.5	2.70	Lim, pp
	42	1096.6	270.17	228.0	0.844	26.8	2.70	Lim, pp, foss
	43	1097.5	1581.30			40.2	2.72	Lim, pp, foss
	Average:		403.6	235.8	0.9	35.8	2.7	
	Standard Deviation:		484.55	102.93	0.13	6.17	0.01	
LaBelle Drill Site (Hendry County)								
1	1	725.8	190.49			44.4	2.72	Lim, pp
	2	726.3	2901.33			31.0	2.72	Lim, vug
	Average:		1545.9			37.7	2.7	
2	1	755.4	101.60			33.7	2.72	Lim, vug, foss
	2	755.7	21.70			26.5	2.71	Lim, vug, foss
	3	756.9	236.64			49.0	2.71	Lim, vug, foss
	4	757.8	223.15			48.2	2.72	Lim, vug, foss
	5	758.4	307.57			49.9	2.72	Lim, vug, foss
	Average:		178.1			41.5	2.7	
Standard Deviation:		114.60				10.69	0.01	
3	1	820.4	660.75			40.7	2.72	Lim, vug
	2	821.4	2224.19			37.8	2.72	Lim, vug, foss
	3	822.0	1309.97			39.8	2.72	Lim, vug
	4	823.0	1962.07			40.3	2.72	Lim, vug
	5	823.5	123.10			37.5	2.72	Lim, vug
	6	824.8	62.33			35.8	2.72	Lim, vug
	7	825.4	266.44			39.4	2.72	Lim, vug
	8	826.2	284.27			51.7	2.71	Lim, vug
Average:		861.6				40.4	2.7	
Standard Deviation:		860.30				4.86	0.00	
4	1	1194.4	51.30			28.0	2.72	Lim, vug
	2	1196.2	73.70			30.4	2.72	Lim, foss, vug
	3	1196.7	0.29			11.3	2.80	Lim, sl hvy min, sl vug
Average:		41.8				23.2	2.7	
Standard Deviation:		37.62				10.40	0.05	

Table I-6. (Continued) Core Analysis Results.

Core #	Sample #	Depth (ft.) bls	Horizontal Permeability (Kair-md)	Vertical Permeability (Kair-md)	Vertical/Horizon Ratio	Porosity Helium (%)	Grain Density (g/cm ³)	Description
5	1	1295.7	42.50			24.1	2.72	Lim, vug
	2	1296.5	1.41			18.9	2.80	Lim, sl hvy min, sl vug
	3	1297.3	138.83			28.6	2.75	Lim, vug
	4	1298.0	28.62			31.8	2.72	Lim, vug
	5	1298.7	123.41			34.7	2.71	Lim, vug
	Average:		67.0			27.6	2.7	
	Standard Deviation:		60.66			6.26	0.04	
	1	1450.7	24.59			26.5	2.71	Lim, sl vug, brec
	2	1451.5	28.59			25.5	2.71	Lim, sl vug, brec
	3	1452.9	2.54			20.0	2.72	Lim, sl vug, brec
	4	1453.7	8.15			25.8	2.72	Lim, sl vug, brec
	5	1454.2	2.10			24.3	2.71	Lim, sl vug, brec
	Average:		13.2			24.4	2.7	
	Standard Deviation:		12.54			2.60	0.01	
BICY Preserve Drill Site (Collier County)								
Sidewall	1	790.0	19.80			25.5	2.71	Lim, pp
	2	790.0	36.50					
	3	790.0	15.20					
	4	790.0	16.40					
	5	790.0	26.90					
	Average:		23.0					
	Standard Deviation:		8.83					
	1	1350.0	112.00			40.1	2.71	Lim, pp
	2	1350.0	232.00					
	3	1350.0	221.00					
	4	1350.0	117.00					
	5	1350.0	113.00					
	Average:		159.0					
	Standard Deviation:		61.77					
Sidewall	1	1425.0	50.60			36.3	2.71	Lim, pp
	2	1425.0	70.90					
	3	1425.0	59.80					
	4	1425.0	53.60					
	5	1425.0	78.30					
	Average:		62.6					
	Standard Deviation:		11.71					
	1	1500.0	25.50					Lim, pp
	2	1500.0	29.10					
	3	1500.0	30.20					
	4	1500.0	24.50					
	5	1500.0	24.30					
	Average:		26.7					
	Standard Deviation:		2.74					
1	1	850.2	7.17	0.2	0.022	24.4	2.72	Lim, foss, vug

Table I-6. (Continued) Core Analysis Results.

Core #	Sample #	Depth (ft.) bsl	Horizontal Permeability (Kair-md)	Vertical Permeability (Kair-md)	Vertical/Horizon Ratio	Porosity Helium (%)	Grain Density (g/cm ³)	Description
2	2	850.5	3.39	0.0	0.012	24.5	2.72	Lim, foss, vug
	3	851.5	0.63	0.2	0.365	18.8	2.73	Lim, foss, vug
	4	853.0	0.98	0.4	0.388	19.7	2.73	Lim, foss, vug
	5	853.9	0.88			27.9	2.75	Lim, foss, chlk, pp
	6	854.3	0.01			6.5	2.85	Dol, foss, sl vug
	7	855.4	0.03			9.7	2.84	Dol, foss, sl vug
	Average:		1.9	0.2	0.2	18.8	2.8	
Standard Deviation:			2.60	0.14	0.21	7.97	0.06	
2	1	859.3	5.59	1.1	0.197	10.5	2.85	Dol, foss, tr vug
	2	860.1	0.01			7.9	2.83	Dol, foss, lmy vug
	3	861.3	0.03			5.8	2.84	Dol, foss, tr vug
	4	862.5	38.30			13.2	2.84	Dol, foss, sl vug
Average:			11.0			9.4	2.8	
Standard Deviation:			18.40			3.21	0.01	
3	1	879.9	164.00			32.0	2.70	Lim, foss, pp
	2	880.3	3415.00			36.3	2.71	Lim, foss, pp
Average:			1789.5			34.2	2.7	
Standard Deviation:								
4	1	899.1	712.00			27.4	2.71	Lim,foss, tr silt, sl vug
	2	900.1	492.00			34.4	2.71	Lim,foss, pp
	3	901.1	11069.00			38.4	2.71	Lim, pp, sl vug
Average:			4091.0			33.4	2.7	
Standard Deviation:			6044.13			5.57	0.00	
5	1	919.3	76.70			36.4	2.70	Lim, foss, pp
	2	919.8	562.00			45.3	2.70	Lim, foss, pp
	3	920.8	1660.00	294.0	0.177	37.2	2.72	Lim, foss, pp
	4	921.5	4569.00			32.6	2.71	Lim, foss, pp
	5	922.2	1.18			22.1	2.72	Lim, chlky, rk frag
Average:			1373.8			34.7	2.7	
Standard Deviation:			1905.05			8.44	0.01	

Table I-7. Removed for Security Purposes

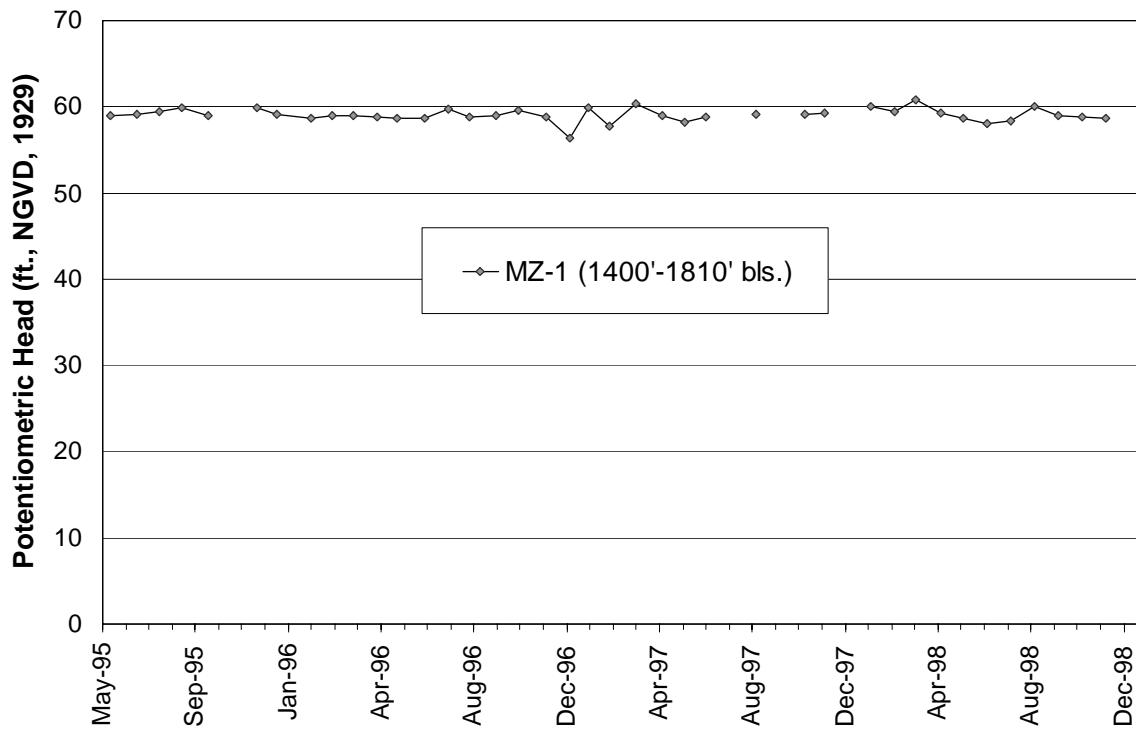


Figure I-12. Potentiometric Head Data from the L-2 Canal Single Zone Floridan Aquifer Monitor Well.

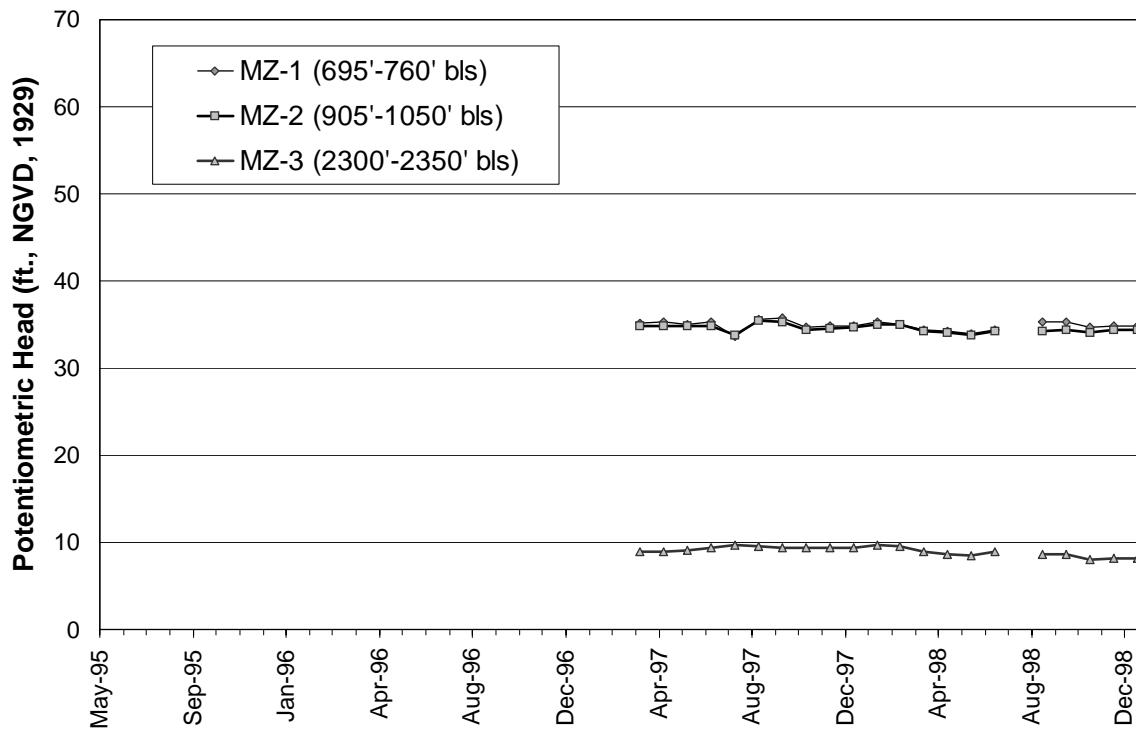


Figure I-13. Potentiometric Head Data from the I-75 Canal Tri-Zone Floridan Aquifer Monitor Well.

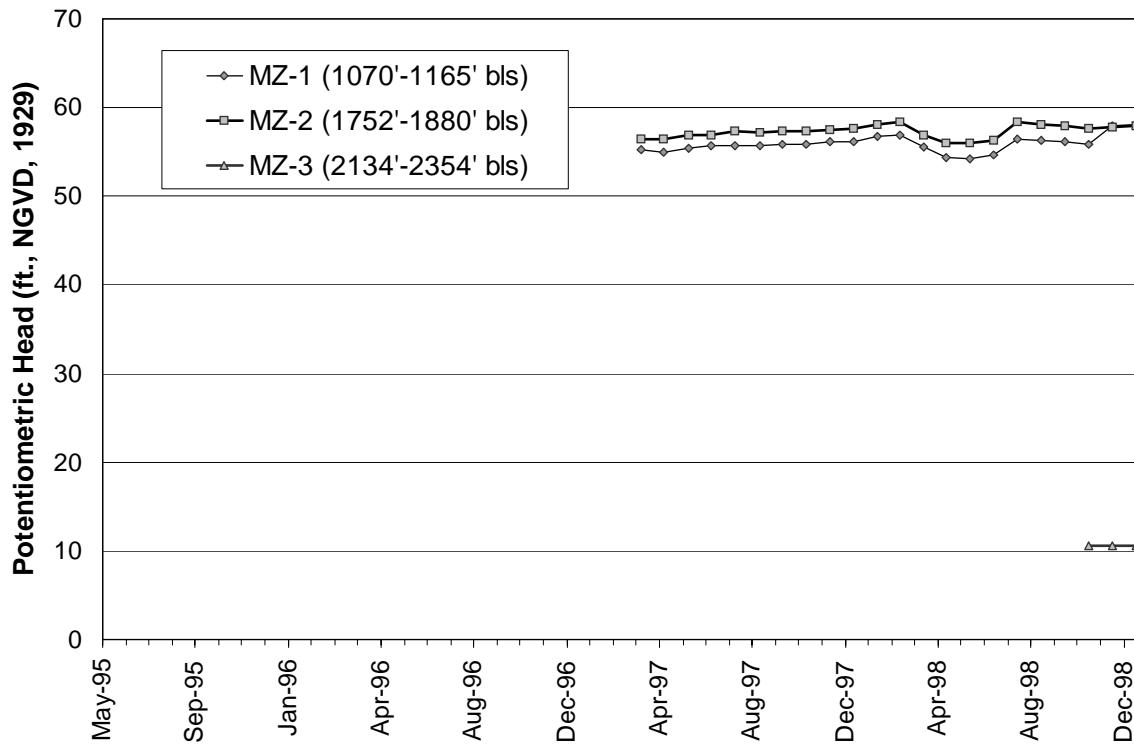


Figure I-14. Potentiometric Head Data from the IWSD Tri-Zone Floridan Aquifer Monitor Well.

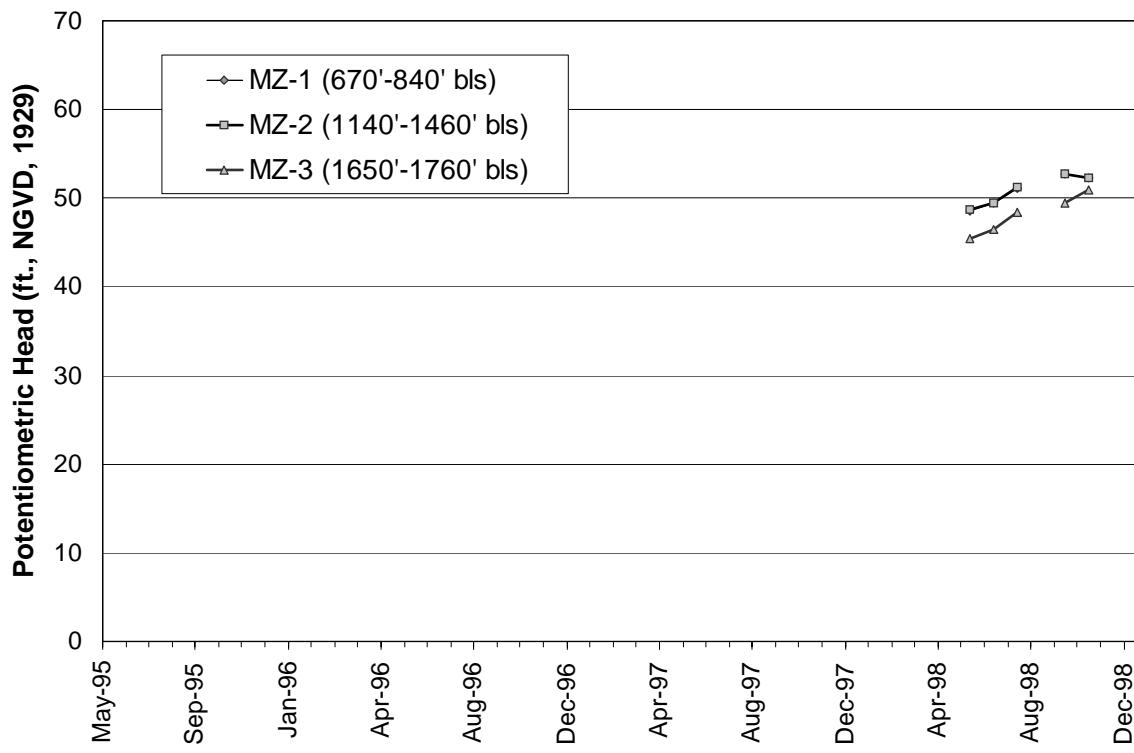


Figure I-15. Potentiometric Head Data from the LaBelle Tri-Zone Floridan Aquifer Monitor Well.

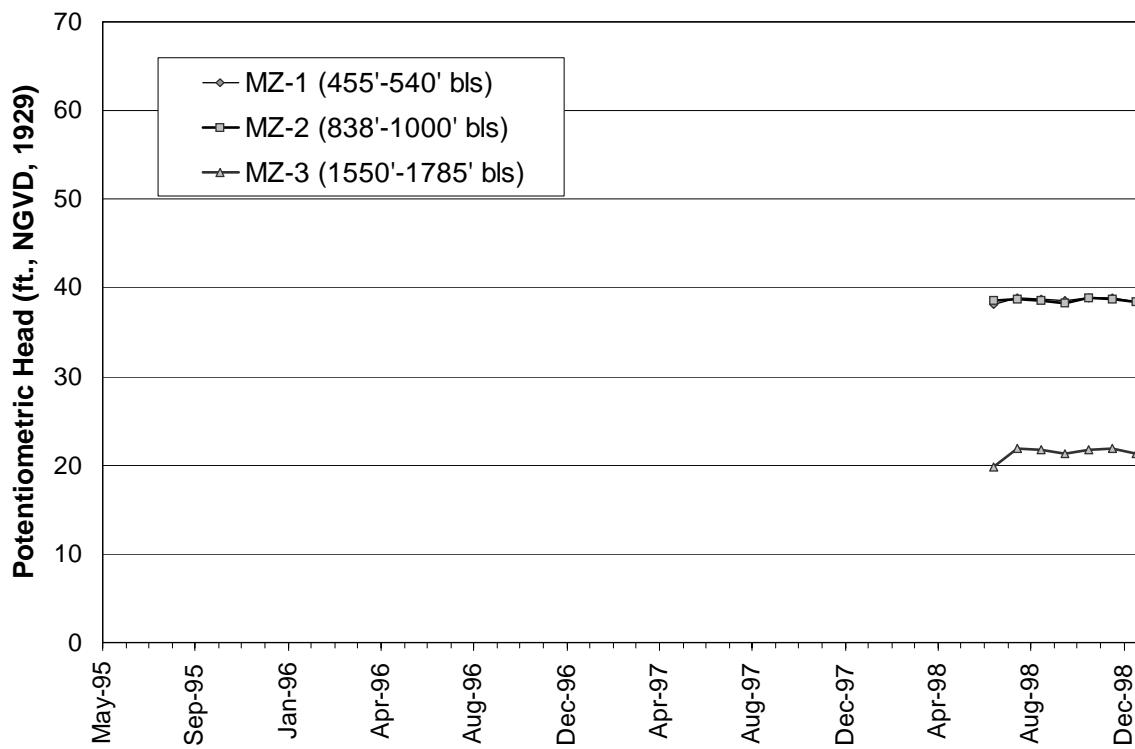


Figure I-16. Potentiometric Head Data from the BICY Preserve Tri-Zone Floridan Aquifer Monitor Well.

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Miller, J. A. 1986. *Hydrogeologic Framework of the Floridan Aquifer System in Florida and in Parts of Georgia, Alabama, and South Carolina*. U.S. Geological Survey Professional Paper 1403-B. U.S. Geological Survey. 91 pp., 33pls.

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